# IN THE UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF PENNSYLVANIA

IN RE INDUSTRIAL SILICON		) Master File:		
ANTITRUST LITIGATION	)	Civil No. 95-2104		
	)			
	)	Civil Action Nos. 96-1131		
	)	96-2003; 96-2111 and 96-		
2338				

## MEMORANDUM

Before the court is Minerais U.S. Inc.'s motion to preclude the expert testimony of the Steel plaintiffs' expert on damages, Dr. Laurits Christensen. Minerais contends that Dr. Christensen's testimony is unreliable within the meaning of <u>Daubert v. Merrell Dow Pharmaceuticals</u>, Inc., 509 U.S. 579 (1993). Additionally, several of the defendants challenged the admissibility of Dr. Christensen's testimony within their summary judgment motions.

Pursuant to Federal Rule of Evidence 104, the court held a hearing on the motion on September 8th, 9th, and 14th 1998. By previous order of court dated September 17, 1998, the court denied the motion and ruled that Dr. Christensen will be permitted to testify at trial in accordance with his report. The following are the court's reasons for the ruling.

The Federal Rules of Evidence require the trial judge to ensure that any and all expert testimony admitted is "not only relevant, but reliable." <u>Daubert</u>, 509 U.S. at 589. In its

discussion regarding expert testimony, the Supreme Court acknowledged the "liberal thrust" of the Federal Rules and their "general approach of relaxing the traditional barriers to 'opinion' testimony." <u>Id</u>. at 588 (citing <u>Beech Aircraft Corp. v. Rainey</u> 488 U.S. 153, 169 (1988)). Thus, the Supreme Court intended to expand the use of expert testimony, not restrict it.

Federal Rule of Evidence 702 governs the admission of expert testimony in federal court. Rule 702 has three major requirements: (1) the proffered witness must qualify as an expert by knowledge, skill, experience, training, or education; (2) the expert must testify to scientific, technical, or other specialized knowledge; and (3) the expert's testimony must actually assist the jury by providing it with relevant information that is necessary to decide a material fact in dispute. Lauria v. Nat'l R.R. Passenger Corp., 145 F.3d 593, 597 (3d Cir. 1998).

## Qualifications

There is no basis in the record to challenge Dr. Christensen's qualifications. Dr. Christensen earned a B.A. degree in Economics from Cornell University. He also holds a Master's degree in Statistics and a Ph.D. in Economics

from the University of California at Berkeley. Dr. Christensen taught economics for twenty years at the University of Wisconsin, Madison. He has served as a member of the Board of Editors of the American Economic Review and has published sixty-six articles in the field of economics. Dr. Christensen also has experience as a private economic consultant. The majority of Dr. Christensen's experience is in a non-litigation context; nevertheless, he has been qualified as an expert in a number of cases.

Given the court of appeals' liberal qualification standards, see In re Paoli R.R. Yard PCB Litig., 35 F.3d 717, 741 (3d Cir. 1994), the court has no difficulty finding that Dr. Christensen has sufficient specialized knowledge in the field of economics and is qualified to testify as an expert on damages in this case.

## Reliability

Under Rule 702's reliability prong, the court must inquire into the methodology used by Dr. Christensen. This analysis focuses on the principles and methodology used by Dr. Christensen in reaching his conclusions, not on the conclusions that he generates. <u>Daubert</u>, 509 U.S. at 595. The reliability inquiry requires the district court to examine

various factors, such as whether the expert's opinion is based on methods and procedures reasonably relied upon by experts in his field rather than on subjective belief or unsupported speculation. <u>Id</u>. at 593-94. An expert's testimony is admissible under Rule 702 as long as the processes or techniques that he used to formulate his opinions are reliable. Id. at 594-95.

### Dr. Christensen's Methodology

In reaching his conclusions, Dr. Christensen used an econometric method known as multiple regression analysis. Multiple regression analysis is a statistical technique designed to determine the effect that two or more explanatory independent variables have on a single dependent variable. This method allows the expert to test the causal relationship, if any, between the explanatory independent variables and the dependent variable. There is no dispute that when used properly multiple regression analysis is one of the mainstream tools in economic study and it is an accepted method of determining damages in antitrust litigation. See Petruzzi's IGA Supermarkets, Inc. v. Darling-Delaware Co., Inc., 998 F.2d 1224, 1238 (3d Cir. 1993).

In Dr. Christensen's regression model, the dependent

variable was the price that defendants charged ferrosilicon. Dr. Christensen's model was constructed so that defendants' price was a function of a set of variables related to supply and demand and market conditions relevant to the Dr. Christensen's model included ferrosilicon industry. independent explanatory variables for the following: iron and steel production, capacity utilization in the iron and steel industry, gross domestic product, a price index electricity, and the import price index of ferrosilicon. In addition, Dr. Christensen's model included a dummy variable to investigate whether plaintiffs sustained damages as a result of defendants' alleged price-fixing.1

Dr. Christensen's study included the time before and after the period in which he found damages to exist. He determined that there was a strong relationship between import prices and domestic prices. That is, he concluded that a very large portion of the variation in domestic prices was explained by the variation in import prices. He further concluded that the remaining independent variables contributed nothing or very little to explaining domestic prices. He then examined the movement of defendants' prices in relation to the

<sup>&</sup>lt;sup>1</sup> Dr. Christensen actually constructed two separate models, one for fifty percent ferrosilicon and one for seventy-five percent ferrosilicon.

movement of the <u>Metals Week</u> import price index from 1986 to 1996. Specifically, Dr. Christensen used the movements in the <u>Metals Week</u> import price index to predict what the movement in defendants' prices would have been absent a price-fixing agreement. Dr. Christensen then tested the statistical significance of the difference between the actual prices and the estimated "but for" prices. Dr. Christensen's results are certain with greater than ninety-five percent confidence level.

Dr. Christensen's before and after models, which compare pricing relations during the alleged price-fixing period to the period before and after the alleged violation, is generally accepted in the field of economics. The regression analysis used by Dr. Christensen is also generally accepted.

Defendants do not dispute the general acceptance and reliability of the methods employed by Dr. Christensen to calculate damages; instead, they contend, among other things, that his model is unreliable because he failed to include certain additional independent explanatory variables.<sup>2</sup> The

<sup>&</sup>lt;sup>2</sup> In response to defendants' criticism, Dr. Christensen included factors suggested by defendants' expert in a subsequent regression analysis. The result was that damages were actually increased.

Supreme Court has made clear, however, that a multiple regression analysis need not include every conceivable independent variable to establish a party's case, as long as it includes those independent variables that account for the major factors that are likely to influence decisions. P.E. Bazemore v. Friday, 478 U.S. 385, 400 (1986).

Moreover, a party challenging the admissibility of a multiple regression analysis must show that the factors it contends ought to have been included would weaken the results of the analysis. Palmer v. Schultz, 815 F.2d 84, 101 (D.C. Cir. 1987). In other words, a party cannot successfully challenge the admissibility of a regression analysis by simply pointing to a laundry list of possible independent variables that were not included in the study. Rather, the party must introduce evidence to support its contention that the failure to include those variables would change the outcome of the analysis. Id. In this case, defendants merely have advanced their own expert's conclusory opinion to that effect, unsupported by any credible evidence that impugns scientific reliability of Christensen's methods.

The court is satisfied that Dr. Christensen used reliable, scientifically accepted methodologies in formulating his opinions. Although couched in the appropriate language,

defendants' challenges are actually directed at his conclusions, not his methodologies.

#### Relevancy

The final Rule 702 criterion is relevancy. Where the antitrust violation is a price-fixing conspiracy, the measure of damages is the difference between the prices actually paid and the prices that would have been paid absent the conspiracy. See, e.g., Hanover Shoe, Inc. v. United Shoe Mach. Corp., 392 U.S. 481, 489 (1968). Dr. Christensen's model, however, does not tell the jury the actual damages suffered by a given plaintiff as measured by the difference between the actual price that a plaintiff paid and the predicted price it would have paid "but for" the conspiracy. Rather, his model does not depend on or even identify a single purchase price for ferrosilicon or a single predicted "but for" price. The court credits Dr. Christensen's explanation that in a product market with multiple sellers and multiple buyers there is, in reality, a range of prices charged by the various sellers and paid by the various buyers for that product. Concomitantly, there will be a range of predicted "but for" prices.

Dr. Christensen's model, therefore, focuses on whether the

average range of prices paid increased during the period of the conspiracy relative to the average range of predicted "but for" prices. Thus, for example, his model concluded that the range of actual prices paid for fifty percent ferrosilicon increased on average by \$1.92 per pound over the range of predicted "but for" prices.

Defendants are correct that Dr. Christensen's model does not provide the jury with a "snapshot" of what actual price any individual plaintiff may have paid any individual defendant at any given time during the alleged conspiracy. Defendants advance this criticism as a challenge to the scientific reliability of Dr. Christensen's model; however, defendants' argument actually challenges the relevancy of the model's results. In other words, defendants question whether Christensen's model will assist the jury in determining what any given plaintiff's actual damages were. The court concludes that it will.

To succeed an antitrust price-fixing claim, plaintiffs must prove that they sustained injury as a result of defendants' unlawful conduct. In re Aluminum Phosphide Antitrust Litiq., 893 F. Supp. 1497, 1499 (D. Kan. 1995) (citing Farley Transp. Co., Inc. v. Santa Fe Trail Transp. Co., 786 F.2d 1342, 1348 (9th Cir. 1985)). Therefore, plaintiffs must establish that defendants' unlawful activities caused at least some of their injury, rather than the injury being wholly attributable to other factors. <a>Id</a>. "[C]ausation of injury may be found as a matter of just and reasonable inference from proof of defendants' wrongful acts and their tendency to injure plaintiffs, and from evidence of change in prices not shown to be attributable to other causes." In re Aluminum Phosphide, 893 F. Supp. at 1499 (citing Bigelow v. RKO Radio Pictures, Inc., 327 U.S. 251, 262-64 (1946)).

Accordingly, an antitrust plaintiff need not prove damages with mathematical certainty, but rather, he need only introduce sufficient evidence of damages to allow a jury to estimate the amount of damages. See In re Lower Lake Erie Iron Ore Antitrust Litig., 998 F.2d 1144, 1176 (3d Cir. 1993). Once causation of damages is determined in an antitrust case, "the actual amount of damages may result from a 'reasonable estimate, as long as the jury verdict is not the product of

speculation or guesswork.'" <u>Id</u>. (citing <u>MCI Communications</u>

<u>Corp. v. American Tel. & Tel. Co.</u>, 708 F.2d 1081, 1161 (7th

Cir. 1983)).

The court has no difficulty concluding that should the jury find that defendants conspired to fix prices, Dr. Christensen's proffered testimony will assist the jury in determining the amount of damages, if any, that plaintiffs incurred as a result of that conspiracy. Thus, if defendants wish to challenge Dr. Christensen's exert testimony, they must do so by vigorous cross-examination and by proffering their own expert to present contrary evidence. <u>Daubert</u>, 509 U.S. at 598.

BY	THE	COURT:	
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		, J	•

Dated:

cc: All Counsel of Record